

What is claimed is:

1. A disc controller comprising:

a network controlling unit for receiving a data
input/output request sent from an external device through a
5 network; and

a disc controlling unit formed in the same circuit
board in which the network controlling unit is formed, the disc
controlling unit coupled to the network controlling unit by
an internal bus provided in the circuit board,

10 wherein the disc controlling unit receives a command
sent from the network controlling unit through the internal
bus and executes a data input/output for a disc drive in response
to the command;

the network controlling unit sends the command, for
15 which a plurality of addresses are set, to the disc controlling
unit; and

the disc controlling unit receives the command and
executes data input/output corresponding to each of the
addresses set in the command for the disc drive.

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2. A disc controller according to claim 1,

wherein a file system operates in the network
controlling unit,

the data input/output request designates data, which is
25 input/output to/from the disc drive, based on a file name, and

the network controlling unit generates an address
corresponding to a storage location of data on the disc drive,
which corresponds to the file name set for the data input/output
request, and sets the address in the command.

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3. A disc controller according to claim 1,
wherein the address is a logical address for
designating a storage location of data in a logical area organized
in a disc space of the disc drive.

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4. A disc controller according to claim 1,
wherein the internal bus is a PCI bus.

5. A disc controller according to claim 1,
10 wherein the network controlling unit includes a
communicating section communicating with the external device
in accordance with a network protocol.

6. A disc controller according to claim 1,
15 wherein a memory accessible in a sharing manner by
both the network controlling unit and the disc controlling unit
is formed in the circuit board;

the network controlling unit and the disc controlling
unit update, at a predetermined timing, operation state
20 information indicating each of operation states of the network
controlling unit and the disc controlling unit, which is stored
in the memory; and

an occurrence of faults in the network controlling
unit and disc controlling unit is detected based on the operation
25 state information.

7. A disc controller according to claim 6,
wherein the network controlling unit acquires, from
the operation state information, an operation state of the disc
30 controlling unit which is a sending destination of the command

when the network controlling unit sends the command to the disc controlling unit, and determines, depending on the acquired operation state, whether the command should be sent to the disc controlling unit.

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8. A disc controller according to claim 6,
wherein the network controlling unit investigates the operation state of the disc controlling unit which is a sending destination of the command based on the operation state information when the network controlling unit can not acquire a receipt notification concerning the command sent to the disc controlling unit, and determines, depending on a investigation result thereof, whether the command should be sent to the disc controlling unit again.

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9. A disc controlling unit according to claim 6,
wherein the network controlling unit investigates the operation state of the disc controlling unit which is a sending destination of the command based on the operation state information when the network controlling unit can not acquire a receipt notification concerning the command sent to the disc controlling unit, and when the network controlling unit judges that the disc controlling unit is not normally operating, the network controlling unit sends the command to at least one of other disc controlling units.

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10. A disc controller according to claim 6, further comprising:

a user interface for notifying the occurrence of the faults when the occurrence of the faults is detected.

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11. A disc controller according to claim 6,
wherein when the occurrence of the faults is detected,
a signal for requesting a restart is sent to one of the network
5 controlling unit and the disc controlling unit where the faults
have occurred.

12. A disc controller according to claim 1,
wherein the disc controlling unit includes an
10 interface for connecting a backup device thereto;
the network controlling unit includes a section for
receiving a backup request concerning the data stored in the
disc drive from the external device, and for sending a backup
command to the disc controlling unit; and
15 the disc controlling unit includes a section for
sending a backup instruction concerning the data stored in the
disc drive to the backup device upon receipt of the backup command.

13. A disc controller comprising:
20 a network controlling unit for receiving a data
input/output request sent through a network; and
a disc controlling unit formed in the same circuit
board in which the network controlling unit is formed, the disc
controlling unit being coupled to the network controlling unit
25 by an internal bus provided in the circuit board, receiving
a command sent from the network controlling unit through the
internal bus, and inputting/outputting data to/from a disc drive
in response to the command,
wherein the plurality of circuit boards connected
30 so as to be capable of communicating with each other are provided;

an occurrence of faults of one of the circuit boards is detected by one of the other circuit boards by exchanging a heartbeat message among the circuit boards; and

when the occurrence of the faults of one circuit board is detected by one of the other circuit boards, the circuit board different from the circuit board causing the faults stands for a processing of the circuit board causing the faults.

14. A controlling method of a disc controller having a network controlling unit for receiving a data input/output request sent from an external device through a network; and a disc controlling unit formed in the same circuit board in which the network controlling unit is formed, the disc controlling unit being connected to the network controlling unit by an internal bus provided in the circuit board, receiving a command sent from the network controlling unit through the internal bus, and inputting/outputting data to/from a disc drive in response to the command,

the method comprising:

by means of the network controlling unit sending one command, for which a plurality of addresses are set, to the disc controlling unit; and

by means of the disc controlling unit receiving the command and executing data input/output corresponding to each of the addresses set in this command for the disc drive.

15. A method according to claim 14,

wherein the disc controlling unit includes a memory accessible in a sharing manner by both the network controlling unit and the disc controlling unit;

the network controlling unit and the disc controlling unit update, at a predetermined timing, operation state information indicating each of operation states of the network controlling unit and the disc controlling unit, which is stored
5 in the memory; and

an occurrence of faults in the network controlling unit and disc controlling unit is detected based on the operation state information.

10 16. A method according to claim 14,
wherein the disc controlling unit includes an interface for connecting the external device thereto;
the network controlling unit receives a backup request concerning data stored in the disc drive from the external device,
15 and sends a backup command to the disc controlling unit; and
the disc controlling unit sends the backup command concerning the data of the disc drive to the backup device upon receipt of the backup command.

20 17. A method according to claim 14,
wherein the disc controlling unit includes the plurality of circuit boards connected so as to be capable of communicating with each other;
an occurrence of faults of one circuit board is
25 detected by one of the other circuit boards by exchanging a heartbeat message among the circuit boards; and
when one circuit board detects the faults, one of the other circuit boards different from the circuit board causing the faults stands for processing of the circuit board with the
30 faults.